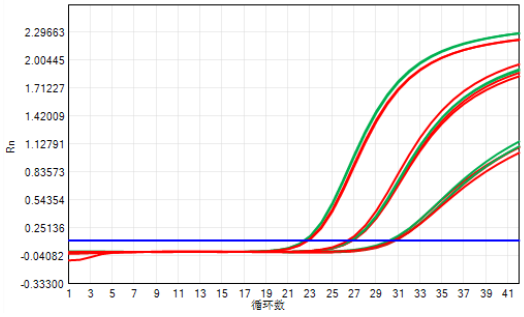
MagPure Particles N R&D Date

Experiment1: Comparison effect of Magen MD5412 (MagPure Particles N) and company A's product beads (RNA virus)

- Sample type：live Newcastle disease vaccine (RNA virus) diluted with sterilized water 1000, 10000 and 50000 times diluted
- Sample volume：160ul
- Elution volume：50ul
- Extraction method：automatic (clap 32 nucleic acid extraction instrument)
- Time：30mins
- Detection method：fluorescence quantification RT-PCR

experimental data：

kit	virus（RNA）	Ct value	Average CT	graph
Magen kit-MagPure Particles N	dilute 1000 time	22.72	22.82	
		22.93		
		22.82		
	dilute 10000 time	26.39	26.68	
		26.84		
		26.82		
	dilute 50000 time	30.76	30.57	
		30.34		
		30.61		
A company kit magnetic beads	dilute 1000 time	22.47	22.45	
		22.43		
	dilute 10000 time	26.72	26.69	
		26.66		
	dilute 50000 time	30.64	30.42	
		30.20		

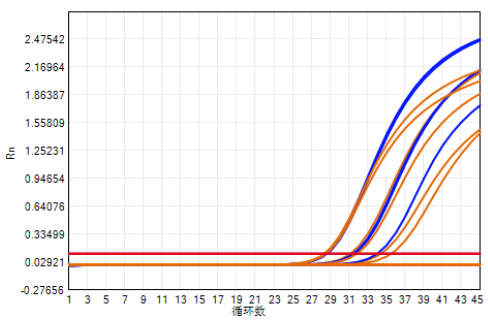
experimental conclusion：

The results showed that MagPure Particles N produced by Magen was similar to the products of A company and magnetic bead, and the repeatability was good.

2、Comparison effect of Magen MD5419-MagPure Particles and B company (DNA virus)

- sample type：pig plasma dilute HBV virus（DNA virus）：10time，100time，1000timedilute
- sample volume：200ul
- elution volume：50ul
- extraction method：automatic(clap 32 nucleic acid extraction instrument)
- time：18mins。
- detection method：fluorescence quantification RT-PCR，fluorescence quantification PCR

experimental data：

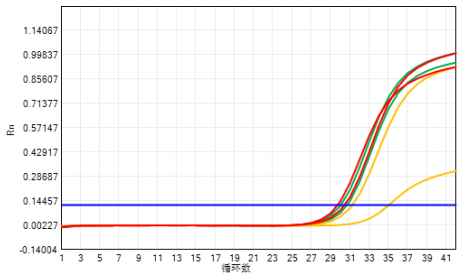
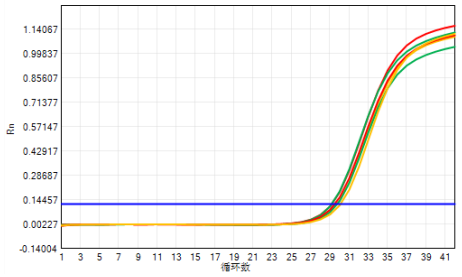
kit	virus（DNA）	Ct value	Average CT	graph
B company kit magnetic bead	dilute 10time	28.46	28.37	
		28.29		
Magen-MagPure Particles N magnetic bead		28.45	28.52	
		28.60		
B company kit magnetic bead	dilute 100time	31.83	31.47	
		31.12		
Magen-MagPure Particles N magnetic bead		31.38	31.46	
		31.54		
B company kit magnetic bead	dilute 1000time	35.45	34.90	
		34.35		
Magen-MagPure Particles N magnetic bead		34.01	34.12	
		34.23		

Conclusion： The results showed that in the extraction of RNA virus and DNA virus, the extraction effect of Magen MagPure Particles N magnetic bead was slightly better than that of B company kit magnetic bead and the extraction effect was better.

3、Contrast the effect of magnetic bead extraction

- system: Magen MD5412 solution system；
- magnetic bead: Sera-Mag CooH Beads, Qiagen Magattrace Beads and MagPure Particle N
- sample type：The pig plasma dilute Newcastle disease vaccine（RNA virus）：10000 time dilute .
- sample volume：200ul
- elution volume：50ul
- extraction method：automatic(clap 32 nucleic acid extraction instrument)
- time：35mins。
- detection method：fluorescence quantification RT-PCR，

experimental data：

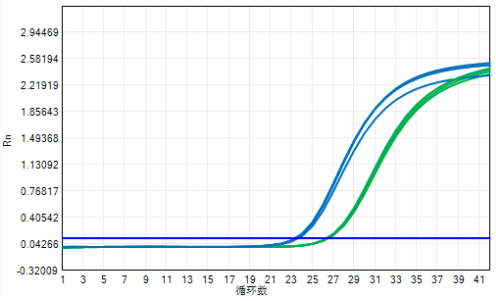
sample	Ct	averagectvalue	Added	graph
Sera-Mag CooH Beads	30.05	30.35	No	
	30.65			
Qiagen Magattrace Beads	35.04	33.13		
	31.22			
MagPure Particles N	29.69	30.04		
	30.39			
Sera-Mag CooH Beads	30.34	30.35	Yes	
	30.37			
Qiagen Magattrace Beads	30.08	29.88		
	29.68			
MagPure Particles N	29.46	29.31		
	29.17			

experimental conclusion： The results showed that the extraction effect of MagPure Particles N from live Newcastle disease vaccine (RNA virus) was slightly better than that of Sera-Mag COOH Beads and qiagen Beads with or without pk, and was stable, while that of Qiagen magnetic bead was slightly worse without pk.

4. Repeatability

- sample type：The pig plasma dilute Newcastle disease vaccine（RNA virus）：1000time，10000 time dilute
- sample volume：200ul
- elution volume：50ul
- extraction method：automatic(clap 32 nucleic acid extraction instrument)
- time：35mins
- detection method：fluorescence quantification RT-PCR

experimental data：

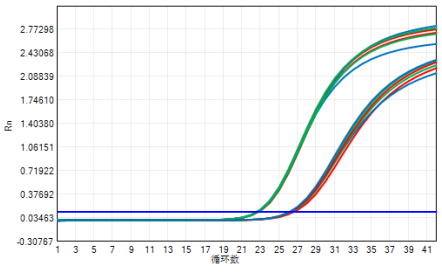
sample	Ct	Average CT value	Virus concentration	graph
MagPure Particles N	23.39	23.38	dilute 1000 time	
	23.61			
	23.32			
	23.32			
	26.31	26.41	dilute 10000 time	
	26.43			
	26.47			
	26.44			

experimental conclusion： The results showed that the effect of MagPure Particles was stable in RNA virus.

5、Difference between batch

- sample type：Newcastle disease vaccine of bovine plasma dilute（RNA virus）：1000time，10000timedilute 。
- sample volume：200ul
- elution volume：100ul
- extraction method：automatic(clap 32 nucleic acid extraction instrument)
- time：35mins。
- detection method：fluorescence quantification RT-PCR，

Experimental data

magnetic bead batch	Ct	Average CT value	RNA virus Concentration	graph
2019.5	22.53	22.63	dilute 1000time	
	22.73			
2019.10	22.55	22.60		
	22.65			
2020.1	22.75	22.69		
	22.63			
2019.5	26.29	26.20	dilute 10000time	
	26.11			
2019.10	26.34	26.26		
	26.19			
2020.1	26.57	26.39		
	26.22			

experimental conclusion： The results showed that different batches of Magpure particles N magnetic bead had the same extraction effect in different concentrations of RNA virus. To prove that there was no significant difference between different batches of MagPure particles N extraction virus

6、The effect of magnetic bead on PCR

- The type of magnetic bead residue was simulated：
  - Take 5ulmagnetic bead+800ul liquid is magnetic bead NO.1，
  - Take 3ul magnetic bead+800ul liquid is magnetic bead NO.2，
  - Take 1ul magnetic bead+800ul liquid is magnetic bead NO.3,
  - Take 0.1ul magnetic bead+800ul liquid is magnetic bead NO.4.
  - And water sample。

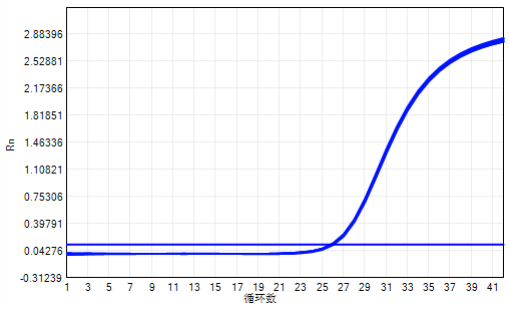
experimental data：

Attached the photo of different concentration magnetic bead liquid：

Note：

The left picture shows the template picture with 5ul superscript solution +9ulMIX+1UL added. From left to right, there are sterilization water NO. 1, sterilization water NO. 2, magnetic bead residue NO. 1, magnetic bead residue NO. 2, magnetic bead residue NO. 3, and magnetic bead residue NO. 4.

The figure on the right shows magnetic bead residue 1, magnetic bead residue 2, magnetic bead residue 3, and magnetic bead residue 4.

Test condition	Ct	graph
1ul template+5ul sterile water	25.83	
1ul template+5ul sterile water	25.88	
1ul template+5ul NO. 1magnetic bead supernatant	25.85	
1ul template+5ul NO.2magnetic bead supernatant	25.76	
1ul template+5ul NO.3 magnetic bead supernatant	26.04	
1ul template+5ul NO. 4 magnetic bead supernatant	25.75	

experimental conclusion：

The results showed that the interference of supernatant at different concentrations did not interfere with PCR amplification and the effect of no interference with magnetic bead was consistent.